



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

On the Use of Sentinels by Valley Quail

BY JOHN J. WILLIAMS

BEFORE taking up the discussion of this question "Do valley quail use sentinels?" I wish to say that although I am seriously inclined to think that quail do use sentinels, yet further observations by others may throw a different light on the subject, so that under these circumstances I prefer to leave the question open.

Should any one feel like taking up the study of birds, his ardor is usually dampened at the outset somewhat by the large amount of time and patience it requires to do so. But should any one be inclined to study valley quail (*Lophortyx c. vallicolus*) in particular, after the first attempt there is very little inclination left to do so. Out of all of our common birds they are the most easily frightened, "Eternal Vigilance" evidently being their motto, but of all our common birds they are perhaps the most interesting, especially in their habits. The rustling of a dog, the snapping of a twig, or the distant report of a gun, serves equally well to put them

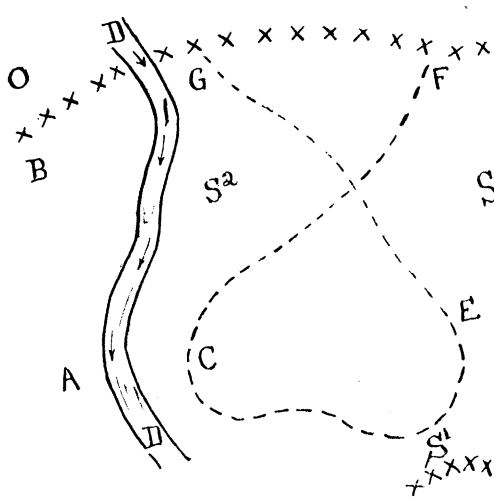
on guard or start. Even the wavering leaf has caused me into the nearest all that a detailed of valley quail will time put on it.

intention of fath- and (to me) un- of these birds, that spring of 1901 for in the foothills of There I felt sure quail, and in fact retreat for the of birds. As a follows is depend-

ough knowledge of the location, I have given in the sketch a general idea of the spot. BF represents the brush fence cut in two by a wide irrigation ditch, DD. At A on the lower bank of the ditch, among some shrubbery screening me from view partially, I chose my hiding place, getting into as good and comfortable a position as possible, for once I got settled I knew it was for an hour or more and half of that time I would have to be absolutely motionless. No note book was needed, and all the notes I took would have to be taken in my head, for a true valley quail dislikes the publicity of a written interview and despises reporters.

Soon from the hillside above the brush fence, I heard their call notes, coming nearer and nearer and answered from different points on the hillside, indicating that the clan was gathering for its feed in the old apple orchard at O in the sketch. Suddenly after some little quietness one of them appeared at F and ran rapidly to the point marked S where he flew up onto the lowest branch of a dead peach tree.

I began to get interested and put the glass on him, although he was only about ninety feet from me. He was thoroughly alert and business-like and was scrutinizing his surroundings as minutely as a nuthatch would the bark of a tree.



them on the wing. shadow of a falling them to scurry from bushes. And yet for study of the habits amply repay any

It was with the oming the secretive known home life I set out in the an old brush fence Placer county. of a large flock of it was my favorite study of a number good deal of what ent upon a thor-

After a few minutes of the closest inspection, he repeated the note "cuh" several times slowly in a low guttural tone, perhaps to tell his mates that the coast was clear. Nothing in his actions had appeared to me extraordinary, as I have frequently seen one lone quail perched in full view, when I have been hunting.

Soon after he had uttered the low notes, I noticed several quail coming out from the brush fence at different points near where the first one had, but the most noticeable thing about their advent was that they were perfectly fearless, slowly walking around picking up gravel or eating grass and clover leaves. Some were even fluffing out their feathers or scratching their heads with their claws, while two lazy ones rolled over on their sides and had a dust bath. None of them were alert and to see them there an observer would believe that hawks and men never existed to torment them. Gradually they kept on coming through the brush fence until I counted thirty-seven in the bunch.

All this time the lone bird at S had remained intensely alert but silent; not even the rippling conversational notes of his mates (which sound so much like the gurgling of a tiny stream in its rocky bed) had disconcerted him. With my glass I could see his brown eye roving everywhere, now up, now down, never apparently longing for the clover his mates were eating but always watchful. The contrast between this lone bird so alert and his fellows close by, free and light-hearted, as if they were out on a vacation, was a puzzle to me.

Slowly the bunch moved forward in the direction of the dotted line in the sketch, now widely separated only to gather closer together a little farther on, all the time with most of their plumed heads bent low among the clover roots, seeking their favorite dainties the clover seeds, while now and then a few would linger behind, taking a bath in the warm dust.

Overhead a few fleecy clouds drifted lazily across the sky, and occasionally the lightest breeze shook out the crimson tassels of the budding oaks, or passed silently across the swirling waters of the ditch. All the world seemed at peace. Numerous insects droned in harmony from everywhere and the quail still moved along.

When they reached the point C in the sketch, one of their number ran to the point marked S and perched himself on the top of a large pile of brush at that point. This was done silently and without any note or call from the lone bird or from any of the feeding birds, only the low murmuring notes of the flock breaking the silence, as they slowly followed along the course indicated by the dotted line in the sketch. After a few minutes the quail in the dead peach tree quietly joined his mates on the ground, while the bird on the brush pile remained alert and almost motionless.

Probably a quarter of an hour had elapsed between the appearance of the first and second watchful birds at their post. At the point C the flock was only twenty-three feet from me by actual measurement, the ditch intervening between us. From this point they slowly worked up the hillside through a lot of tall dead weeds, close to the brush pile at S.

Far off on the edge of the woods the resonant drumming of a woodpecker came to me faintly, while the scream of a quarrelsome blue jay caused the lone quail to move his head quickly in that direction.

About this point the birds curved their course back towards the brush fence and I began to wonder whether some other bird would repeat the previous peculiar actions, which by this time began to have an appearance of design and not mere chance, but no such thing occurred and the bunch moved forward quietly for some few minutes until they came to the point marked E in the sketch, where

a single bird separated quietly from the flock, and running to the foot of a fence post at S² reached the top by a short flight. At this point of my observations I became very much interested, anxiously waiting for the lone bird at S¹ to rejoin the flock, as proof of my theory that the whole performance was prearranged and intentional, and not of an accidental nature, and after a minute or so the bird quietly did so.

To say the least I was delighted, for here was something worth following up. That these birds were schemers, I had had to previously acknowledge after many a hard day's unsuccessful tramp after them, but to find out that that they had a well organized system of protecting themselves while feeding out in open ground was an eye-opener.

From E they followed the dotted course, crossing their original line of travel and moving slowly, finally disappeared into the brush fence at G on their way to the old apple orchard. After some little time the lone quail at S¹ also left his post and was lost to sight with the rest of the bunch.

My initial interview with the valley quail in their own homes had proved successful beyond my expectations and and I had been able to keep close track of all their movements and that too when they were some distance from any shelter.

Such ideal conditions for observation and study do not always occur and the wonder was that there was not some kind of an interruption.

That the facts of the case were just as stated and not mere guess work on my part, I have proved several times since then, sometimes by accidental observations and sometimes by a good deal of perseverance, and only as recently as January 25th, of this year, I watched a flock of valley quail slowly pass through a small orange orchard up in one of the Santa Barbara canyons, in their course crossing a country wagon road in perfect unconcern, while a lone quail on the top of a fence-post "sentinelled" the procession from his position.

These tactics are adopted only when the flock wishes to feed or pass through some more or less open piece of ground, I believe, for although I have watched them repeatedly when they were in the timber, I have never yet seen them put out a sentry.

The most frequent instances in which I have noticed this sentinelng has been when they were feeding or dusting themselves along a much used road, for in other cases where cover is close at hand they seem to rely on it more, but during the mating season I have had female quail come within ten and once within five feet of me, fearlessly looking under or into old logs or brush heaps for a possible nesting place, while the male bird perched on an uprooted stump or log and kept the keenest kind of a gaze on me, from his position thirty or more feet away from me.

Under such conditions of observation the observer must become like the stone or tree against which he rests motionless, and this is why I said in the first place that a student of valley quail must put up with a great deal, but in the end he is amply repaid for the time and trouble he has been put to.

Whether the male bird alone acts as sentinel I am unable to say, and leave it to future study, but hereafter when you see one quail perched alone and in full view, you can be sure that in most cases the flock is close by, so don't shoot him because he is such an easy mark.

In regard to this habit seen in other kinds of game birds, I have no knowledge, but although I have studied our mountain quail (*Oreortyx p. plumiferus*) a great deal, I have never come across anything that would indicate the occurrence of this habit in the species.